

Serial No. 10/608,400

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IN THE CLAIMS:

Please replace the present claims with the following amended set of claims.

Listing of Claims:

1. (Canceled).
2. (Canceled)
3. (Previously Presented) A microfluidic device of Claim 33 wherein said uniform array of posts has a second column of posts adjacent to a first column of posts, said posts of said second column positioned between the posts of said first column, thereby preventing said sample liquid from flowing in a straight line through said space.
4. (Previously Presented) A microfluidic device of Claim 33 wherein said posts have at least one wedge-shaped cutout aligned vertically to said substrate for facilitating movement of the sample liquid across said well from said sample entry uniformly over said substrate.
5. (Previously Presented) A microfluidic device of Claim 33 wherein said uniform array of posts is positioned above said substrate.
6. (Previously Presented) A microfluidic device of Claim 33 wherein said uniform array of posts contacts said substrate.
7. (Previously Presented) A microfluidic device of Claim 33 further comprising a ramp for directing flow upward or downward to a substrate disposed on a plateau.
8. (Previously Presented) A microfluidic device of Claim 33 further comprising a groove or weir disposed perpendicularly to the direction of sample flow.
9. (Canceled).

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10. (Canceled)

11. (Withdrawn) A method of Claim 34 wherein said uniform array of posts has a second column of posts adjacent to a first column of posts, said posts of said second column positioned between the posts of said first column, thereby preventing said liquid sample from flowing in a straight line over said substrate.

12. (Withdrawn) A method of Claim 34 wherein said posts have at least one wedge-shaped cutout aligned vertically to said substrate for facilitating movement of said liquid onto said substrate.

13. (Withdrawn) A method of Claim 34 wherein said posts are positioned above said substrate.

14. (Withdrawn) A method of Claim 34 wherein said posts contact said substrate.

15. (Withdrawn) A method of Claim 34 wherein said well further comprises a ramp for directing flow upward to a substrate disposed on a plateau.

16. (Withdrawn) A method of Claim 34 wherein said well further comprises a groove or weir disposed perpendicularly to the direction of sample flow.

Claims 17-26 (Canceled)

27. (Canceled).

28. (Withdrawn) A method of Claim 35 wherein said uniform array of microposts has at least two columns of said microposts disposed at a right angle to the flow of said sample, the second of said two columns of microposts positioned between the posts of said first column, thereby preventing said sample liquid from flowing in a straight line through said well.

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29. (Withdrawn) A method of Claim 35 wherein said posts have at least one wedge-shaped cutout aligned vertically to said substrate for facilitating movement of said liquid into said substrate.

30. (Withdrawn) A method of Claim 35 wherein said posts are positioned above said substrate.

31. (Withdrawn) A method of Claim 35 wherein said posts contact said substrate.

32. (Withdrawn) A method of Claim 35 wherein said inlet passageway comprises a ramp for directing flow upward or downward to said substrate disposed on a plateau.

33. (Currently Amended) A microfluidic device for assaying a liquid biological sample of 10 μ L or less comprising:

(a) at least one well defined by top and bottom surfaces enclosing a sidewall, said well having an entry in said sidewall for introducing said sample into said well from a capillary passageway and an air vent positioned in said sidewall opposite said sample entry, said well containing a uniform array of posts;

(b) a reagent or conditioning agent deposited on an absorbent substrate, said reagent or conditioning agent-containing substrate positioned adjacent to said uniform array of posts; and wherein said posts are arrayed in columns at a right angle to the flow of said sample from said sample entry to said air vent for directing said sample from the entry of said well uniformly over said substrate containing reagent or conditioning agent in a predetermined uniform manner and purging air from said well through said air vent, the capillary force in said well being determined by disposing said posts to obtain contact with said substrate in uniform manner.

34. (Withdrawn) A method of distributing a liquid sample of 10 μ L or less uniformly over a reagent or conditioning agent deposited in an absorbent substrate placed in a well of a microfluidic device, said method comprising passing said liquid sample through a uniform array of posts and directing said sample over said substrate;

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wherein said well is defined by top and bottom surfaces enclosing a sidewall and has an entry in said sidewall for introducing said sample into said well from a capillary passageway and an air vent positioned in said sidewall opposite said sample entry, adjacent to said uniform array of posts.

35. (Withdrawn) A method of distributing a liquid sample of 10 μ L or less uniformly over a reagent or conditioning agent deposited in an absorbent substrate placed in a well of a microfluidic device, said method comprising:

(a) passing said liquid sample over an inlet passageway containing grooves or weirs disposed perpendicularly to the flow of the sample liquid, and thereafter;

(b) passing said sample liquid through a uniform array of posts and directing said liquid sample uniformly over said substrate;

wherein said well is defined by top and bottom surfaces enclosing a sidewall and having an entry in said sidewall for introducing said sample into said well from a capillary passageway and an air vent positioned in said sidewall opposite said sample entry, adjacent to said uniform array of posts.

36. (Previously Presented) A microfluidic device of Claim 33 wherein said uniform array of posts is positioned between said entry and said substrate.

37. (Withdrawn) A method of Claim 34 wherein said uniform array of posts is positioned between said entry and said substrate.

38. (Withdrawn) A method of Claim 35 wherein said uniform array of posts is positioned between said entry and said substrate.